

HER NOPREN Summer Speaker Series for Students

Virtual Student Presentations

August 12, 2026 – 4:00-5:00 p.m. ET

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Associations Between Acculturation and Dietary Outcomes by Food Security Status Among Foreign-Born Adults in the U.S.

Presenter: Nour Hammad

University: Harvard T.H. Chan School of Public Health

Objective: This nationally representative study aimed to examine the relationship between acculturation and dietary outcomes among foreign-born US adults and the modifying effect of food security status.

Background: Studies have shown differential impacts of acculturation on diet quality and have linked food insecurity to poorer diet quality and high intakes of ultra-processed foods (UPF). Limited evidence exists on the associations between acculturation, diet quality, and UPF subgroups among foreign-born adults in the US or the differential associations by food security status.

Methods: This is a serial cross-sectional study that uses data from 4527 foreign-born adults aged ≥ 20 years who completed two 24-hour dietary recalls from the 2011-2018 National Health and Nutrition Examination Survey. The primary exposure was acculturation status, operationalized as a score comprising the proportion of life spent in the US and the language spoken at home. Acculturation was binarized as less acculturated (score ≤ 3) vs. more acculturated (score > 3). The primary outcomes were diet quality, measured using the Healthy Eating Index (HEI)-2020 (ranges from 0 to 100, with higher scores reflecting better diet quality) and UPF consumption as classified using the NOVA food classification system. Food security status was assessed using the 18-item US Food Security Survey Module. Associations between acculturation and dietary outcomes were examined using regression models, adjusting for sociodemographic covariates. Effect modification with food security status was assessed by adding interaction terms.

Results: In the sample, 60% were less acculturated. Overall, the mean HEI-2020 score was 55 (out of 100), and the mean UPF intake was 44% of total energy intake. The prevalence of food insecurity among foreign-born adults was 22%. Regarding diet quality, lower acculturation was associated with higher HEI-2020 scores ($\beta = 3.29$, 95% CI = 2.15, 4.42). In particular, lower acculturated adults had higher intakes of total and whole fruits, vegetables, greens and beans, sea and plant proteins, fatty acids, and refined grains as well as lower intakes of added sugars and saturated fats. Similarly, lower acculturation was associated with a lower UPF intake (as % energy: $\beta = -5.85$, 95% CI = -7.23, -4.46; as % grams: $\beta = -3.83$, 95% CI = -5.31, -2.35). When examining UPF subgroups, lower acculturated adults had lower consumption of cakes, cookies, pies, pancakes, and pastries; desserts and other sugary products; salty-snacks; frozen and shelf-stable plate meals; sandwiches and hamburgers on a bun; French fries and potatoes; carbonated soft drinks; and others; bread consumption was higher among less acculturated participants. Despite having high levels of food insecurity, there was no significant effect modification by food insecurity on the associations between acculturation, diet quality, or UPF intake (P-interaction > 0.05).

Conclusions: In this nationally representative sample, among foreign-born adults, lower acculturation was associated with higher diet quality and lower ultra-processed food consumption.

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Implementation of Produce Prescription Programs Integrated with Diabetes Care: A Multisite, Mixed Methods Pragmatic Evaluation

Presenter: James Marriott

University: University of North Carolina at Chapel Hill

Objective: The objective of this study was to conduct a multisite, mixed methods pragmatic evaluation of the implementation of produce prescription programs (PPR) integrated with diabetes care.

Background: The Produce Prescription Program for T2D (PPPT2D) was a quasi-experimental study that enrolled adults living with food insecurity and T2D across five Gus Schumacher Nutrition Incentive Program (GusNIP)-funded PPR programs throughout the U.S. to evaluate the implementation of these programs and understand associated changes in HbA1c, blood pressure, body mass index, and other secondary outcomes. The intervention group received a PPR plus standard of care, while the control group received standard of care only. As the popularity of PPR programs grows nationally and emerging evidence demonstrates their potential effectiveness for supporting diabetes management, there is a gap in implementation knowledge. Most existing evidence focuses on health outcomes at a single site and lacks information on patient experience. The specific gap this work addresses is how PPR programs operate across multiple real-world settings, what dose participants receive, how they experience the programs, and what implementation factors shape engagement.

Methods: The evaluation utilized a convergent parallel design. Qualitative data were collected through post-program focus groups with intervention participants (N=9 focus groups; 34 participants across five sites) enrolled in the PPPT2D initiative to better understand participant experiences. Program reach and dose (i.e., PPR issued, PPR received, nutrition education received) data were collected from each site throughout the study. The qualitative and quantitative data were collected concurrently, analyzed independently, and integrated at the interpretation stage.

Results: Five cross-cutting themes emerged between the qualitative and quantitative findings. First, participants reported an average of \$235 of produce redeemed and similarly characterized increased access and exposure to fruits and vegetables, particularly for those who regularly experience barriers to healthy eating. Second, the program supported diabetes self-management and nutrition knowledge through a variety of nutrition education offerings, with participants emphasizing that cooking skill development may be an essential component of PPR programs for participants with type 2 diabetes. Third, participants reported and described perceived improvements in physical, emotional, and psychosocial health. They highlighted how improvements in diet and diabetes management were closely intertwined with improvements in mood, confidence, and overall quality of life. Fourth, participants came from a variety of household sizes and compositions and reported that program benefits extended beyond the individual to families and social networks. Fifth, participant experience varied meaningfully across delivery models, with important implications for future program design.

Conclusions: While the quantitative and qualitative data largely converged, such as through high amounts of dollars of produce redeemed aligning with participant accounts of reduced food access barriers, there were meaningful areas where the data diverged. For example, the quantitative data could not capture relational benefits, such as the way programs brought participants together with healthcare professionals and family members; however, the qualitative data was able to describe this important program benefit. These divergent findings can inform ways in which PPR evaluation frameworks could be tailored to be more comprehensive and inclusive of traditionally underreported metrics.

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3 Feasibility of the KnowHow Digital Intervention for Parents of Preschool-Aged Children

Presenter: Victoria Wurzel

University: Cornell University

Objective: To assess the preliminary feasibility of the KnowHow digital intervention and its data capture methods for child diet and physical activity behaviors among parents of preschool-aged children.

Background: The KnowHow pilot program is a 10-week digital intervention that integrates a mobile app, biweekly virtual group discussions, and child focused mailed materials to support parents of preschool-aged children in establishing healthy eating and physical activity behaviors for their children through a lens of mindful parenting.

Methods: Feasibility domains included recruitment, retention, usability, and acceptability. Data were collected through pre- and post-intervention survey assessments and parent-submitted photo and video uploads of child diet and movement skills; post-intervention feasibility surveys; and qualitative mid intervention interviews and post-intervention focus groups to contextualize participant experiences.

Results: Cohorts 1 and 2 (n = 6 each) served as pre-test groups to refine study logistics and the presentation of program and study information, resulting in changes to the timing of group discussions, the addition of a "welcome session" introducing study and program components, and adjustments to the timing of participant payments. Cohort 3 recruited 17 participants, resulting in 12 enrolled in the KnowHow Program. Completion of surveys and uploads was high at baseline (100% survey completion; 91.6% photo and video upload completion) and moderate post-intervention (75% survey completion; 58.3% photo and video upload completion). Program retention was high, with 91.6% of participants completing the program's app components. Participation in online group discussions was moderate, with an average attendance of 65%. Interview and focus group data indicated positive acceptability of the program components. Dominant themes included the sense of community fostered by group discussions and the perceived value of the mindful parenting strategies introduced in the program. Participants reported applying intervention strategies in daily life and expressed confidence in continuing these practices after program completion.

Conclusions: Findings support the feasibility and acceptability of the KnowHow digital intervention and its remote assessment methods. Iterative changes between pre-test cohorts and Cohort 3 improved participant engagement in intervention components and data collection. Cohort 4 of the KnowHow Study is in development and will explore a partnership with local Cooperative Extension educators to deliver the KnowHow Program with an in-person group discussion option, based on participant feedback.

Presenter: Naina Qayyum

University: Tufts University, Friedman School

Objective: The systematic review aims to (1) assess the evidence for the validity and reliability of technology-based dietary assessment tools in children and adolescents aged 2-18 years and (2) assess the attributes of these tools for population-level scalability for dietary assessment.

Background: Accurate dietary assessment in children and adolescents is essential for nutrition surveillance and the evaluation of dietary interventions. Technology-based dietary assessment tools offer promising advantages over traditional paper-based methods in terms of cost efficiency, real-time data gathering, and conducting large-scale data collection. However, it is important to evaluate the validity, reliability, and population-level scalability of these technology-based dietary assessment tools for children and adolescents. Unlike adults, children and adolescents are highly prone to cognitive and recall biases and need tools that can overcome these limitations. This review contributes to a sparse evidence base by assessing technology-based tools for 2–18-year-olds across three dimensions: validity, reliability, and scalability.

Methods: A systematic search was conducted across three databases, Embase, Ovid, and Web of Science, from January 2000 to December 2025. Studies were eligible if they assessed both validity and reliability of a technology-based dietary assessment tool in children and adolescents aged 2 to 18 years and published in peer-reviewed journals. Validation method quality was assessed using Frongillo et. al. (2019) as an appraisal framework. Validity and reliability findings were assessed using established thresholds for different statistical methods (e.g., ICC, kappa, Bland-Altman analyses, Spearman's and Pearson's Correlations). ILSI Europe Best Practice Guidelines were used to assess the different attributes reported for the tools to assess population-level scalability. Risk of bias was assessed using the QUADAS-2 framework.

Results: A total of 4,902 records were identified, and 18 studies met the inclusion criteria, with 17 technology-based dietary assessment tools listed across them. Most technology tools were tested within school settings (61%). Around 44% of tools achieved good group-level validity and 61% achieved good reliability, with 22% (mostly tools using digital image capture) achieved both. Web-FFQs and web-24-hour recalls demonstrated a validity-reliability paradox, i.e., reporting good reliability but poor validity. Based on the assessment of technology tool attributes, population-level scalability was not consistently associated with stronger validity or reliability of the dietary assessment tool.

Conclusions: While digital image capture demonstrates good validity and reliability, these methods remain resource-intensive requiring specialized equipment and human effort, thereby limiting their scalability for population level dietary assessment. Therefore, the design of future technology-based dietary tools could consider incorporating automation to mitigate participant burden and resource constraints for large-scale dietary assessments, especially in low-resource settings. A tool chosen for population level dietary assessment should satisfy both validity and reliability requirements to be considered accurate.

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FERN 2026: UPF Prevalence & Nutrients of Concern in à la Carte Sales in Texas
Elementary Public Schools

Presenter: Adedasola Obatola, Clara Duarte, Veronica Osorio

Universities: Wake Forest University, Lees McRae College, Meredith College

Objective: During the Fellowship for Exploring Research in Nutrition at the Global Food Research Program at UNC Chapel Hill, we conduct a study to assess the prevalence of ultra-processed foods (UPFs) and foods high in nutrients of concern (added sugar, sodium, saturated fat) sold as competitive foods in Houston (TX) elementary schools.

Background: Competitive foods are sold from vending machines and à la carte lines. Those are regulated through the USDA Smart Snacks standards, which limit certain nutrients (sodium, total fat, saturated fat, total sugars) and calories, and set some food group requirements. However, they do not consider the level of processing. Ultra-processed foods (UPFs), are industrially formulated using non-culinary ingredients and cosmetic additives, engineered to be hyper-palatable. Frequent childhood exposure to UPFs has been linked to poor dietary quality and diet-related chronic disease risk, a particular concern given that children consume up to half of their daily calories at school. Despite these health implications, little is known about the extent to which UPFs are represented among competitive foods sold to children in elementary schools. This study addresses that gap by investigating UPF prevalence and nutrients of concern in competitive food a la carte sales in Texas elementary schools.

Methods: Competitive food a la carte sales data for the 2024–2025 school year were obtained from the top 50 Houston-area elementary schools by enrollment, representing 39,730 students. A spreadsheet was created with total sales from those schools and Nutrition Facts Panel for each product sold. Each product was classified as UPF or not, checked for compliance with USDA Smart Snacks Standards, and compared to the proposed FDA Front-of-Package Labeling "high in" thresholds for saturated fat, sodium, and added sugar. The percentage of products and sales for each category was then used for analysis.

Results: The final sample included 78 products totaling \$480,326 in sales. UPFs accounted for 82% of products (n=64) and 99% of total sales (\$475,621). Despite this high UPF prevalence, 95% of products (n=74) met Smart Snacks Standards and 5% (n=4) did not, representing 1% of sales (\$3,376). Under the proposed FDA thresholds, 14% of products (n=11) were high in added sugar, accounting for 30% of total sales (\$142,501), while 3% (n=2) were high in sodium and 3% (n=2) were high in saturated fat, each representing about 1% of sales.

Conclusions: Those results show that the majority of a la carte products are UPF, and some exceed recommended thresholds for added sugar, implying that USDA standards should start considering the level of processing for that regulation and this nutrient, considering the negative health effects associated with it. Compliance with standards should also be strengthened by school food authorities, as 4 products fail to meet the requirements. Schools could start making partnerships with local producers to incorporate fresh or minimally processed products, in order to increase the healthiness of elementary school environments.

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